

opinion that the entire plant is probably submerged during most of the year, either covered by snow or by the nearly-freezing water of snow-runoff. When we found the species in early September, the inflorescences were just beginning to emerge from the "boot." Very often, only the distal portions of the leaf-blade are visible because of the sand which is constantly washed over the plants. *Phippsia* is the only vascular plant that grows right in the stream channels.

The extreme rarity of *Phippsia* in the region may be due to the scarcity of relatively level wet areas at the high altitudes at which it grows. High lakes with gently sloping boggy margins are not common. It is probable that at the Summit Lake locality there exists a complex array of climatic and edaphic conditions and seasonal rhythms which are rarely met with elsewhere and which are not easily detected by our present tools of ecological analysis.

It is also possible that future exploration may show that *Phippsia* is more common in the Colorado Rockies than is now assumed. I personally doubt this, but the fact remains that, by and large, the alpine regions of Colorado are still relatively unknown botanically. The discovery of any new areas of relict concentration may change the picture radically.—UNIVERSITY OF COLORADO.

STUDIES IN THE GENUS *EUPHRASIA* L.—III¹

E. O. CALLEN

EUPHRASIA ARCTICA LANGE

IN a review of the origin and validity of the name *Euphrasia arctica*, Fernald (1933) pointed out that Linnaeus, and subsequently Willdenow, described *E. latifolia* from southern Europe and northern Africa, but that the plant now belongs to the genus *Parentucellia* as *P. latifolia* (L.) Caruel. In 1814 Pursh identified a Labrador plant (from the Dickson Herbarium) as *E. latifolia*, and for his *Flora Americae Septentrionalis* he copied Willdenow's description, but added this comment at the end:—"flowers smaller, pale purple." As a result, when identifying Canadian

¹ Previous papers in *Journal of Botany* 78 (933): 213-218, 1940; and vol. 79 (937): 11-13, 1941.

Rocky Mountain material collected by Drummond, Hooker (1838) attributed the name to Pursh.

In 1870 Rostrup clearly and validly published *E. arctica* Lange in a list of the plants from the Faeroe Islands, and mentioned that Prof. Lange had found the plant to be fairly common in Greenland and Iceland. Later however, in the text of his *Flora Danica*, Lange (1877) abandoned the name *E. arctica* in favor of *E. officinalis*, var. *latifolia* (Pursh) Lange, after discovering the Hooker record of *E. latifolia* from the Rocky Mountains, though the actual plate for the *Flora Danica* was obviously made from typical Greenland material. The name *E. arctica* itself he reduced to a synonym.

Fortunately the Drummond material from the Rocky Mountains, called *E. latifolia* Pursh by Hooker, still exists in the Gray Herbarium, and Fernald (1933) determined it to be *E. disjuncta* Fernald & Wiegand. Unfortunately the material from the Dickson Herbarium, on which Pursh based his description, cannot now be traced. However, Fernald (1933) pointed out that the only Labrador species with small purple flowers are:—*E. williamsii*, var. *vestita*, *E. purpurea* and *E. purpurea*, var. *randii*.

In 1896 Wettstein revived the name *E. latifolia* Pursh, giving a very full description of the plant. He had examined a good deal of material from Greenland, as well as from Iceland and Labrador, all apparently belonging to one species, though a variable one. His conception of this species, therefore, is based largely on Greenland material, and as he had seen no material from Labrador referable to any other species, and as no other species had been described from Labrador, he felt that the name *E. latifolia*, by then unoccupied again, should be used in preference to creating a new one and so cause further confusion in the synonymy. Thus *E. latifolia* Pursh ex Wettstein came into general use, and though Wettstein was aware of the existence of the name *E. arctica*, the fact that Lange abandoned it himself in 1877, drew attention away from it. However, under the International Rules of Botanical Nomenclature (1930), *E. latifolia* Pursh ex Wettstein constitutes a homonym, and as such is invalid. This leaves *E. arctica* Lange as the first valid description of the plant from Greenland, Iceland and the Faeroe Islands, and as we now know, from eastern and north-eastern Canada.

In his Revision of the British *Euphrasiae*, Pugsley (1930) followed Wettstein in the use of the name *E. latifolia* Pursh, but while the paper was in press, the resolution rejecting homonyms was passed by the Fifth International Botanical Congress. He therefore decided to substitute a new name, *E. frigida* (1930), adding it as a footnote during proof correction, without however specifying a type. The late A. J. Wilmott, Curator of the British Herbarium of the British Museum, London, informed the writer in 1940 that he had persuaded Pugsley to designate a lectotype on one of the four sheets of *E. latifolia* from the Wettstein Herbarium that had been borrowed from Vienna for that purpose. Nevertheless it is quite clear that *E. arctica* Lange has priority over *E. frigida* Pugsley, even although there has been no actual type designated.

With *E. frigida* identified as the subglabrous *E. arctica* of Iceland, Greenland and Canada, the question naturally arises, has the more or less pubescent form of *E. arctica*, as originally described by Rostrup, been described from Britain or northern Europe? An examination of exsiccatae leaves no doubt that it has been described as *E. marshallii* Pugsley from Britain, and as *E. latifolia*, var. *subcurta* E. Joerg. from Norway. Pugsley's concept of *E. latifolia* Pursh ex Wettstein was of a glabrous or subglabrous taxon, which he renamed *E. frigida*, narrowing down Wettstein's concept, that included both glabrous and pubescent individuals. Subsequently however, after seeing material from Iceland, Pugsley (1933) incorporated Joergensen's *E. latifolia* var. *subcurta* into his *E. frigida* as var. *subcurta* (E. Joerg.) Pugsley, thus broadening his original conception of *E. frigida* and bringing it into line with Wettstein's interpretation. It is interesting to note that some of Marshall's material, which formed the basis of Pugsley's *E. marshallii*, was submitted to Wettstein at the time of collection, and was identified as *E. latifolia* Pursh.

In contrasting *E. frigida* (as *E. latifolia*) with *E. marshallii*, Pugsley (1930, p. 497) pointed out how the former is "—a lax, much less hairy plant,—." Later (1933) he admitted that what he had described as *E. frigida* from Britain, should really have been described as a variety of the European *E. latifolia* Pursh, which he now wished to call the typical *E. frigida*. Until 1933

Pugsley's concept of *E. frigida*, as we now see from his own admission, was so narrow, that of necessity he had to give specific rank to the very pubescent plants of the Scottish sea cliffs and shores.

This conception of a species with pubescent and glabrous forms was accepted by Pugsley in some other taxa, though mainly after he had published his Monograph (1930), as for example in the case of *E. curta* Fries (pubescent) and its var. *glabrescens* Wettstein (or f. *glabrescens* Wettstein as Pugsley sometimes wrote it, though this form should more correctly be attributed to Pugsley). In *E. brevipila* B. & G. (with some setae, bristles and short-stalked glands), and its f. *subeglandulosa* Bucknall (setae and bristles only) and var. *notata* Pugsley (densely covered with long-stalked glands) there is quite a range of pubescence. Bucknall's f. *subeglandulosa* was only used by Pugsley on herbarium sheets in the post 1930 period.

During the course of correspondence with the late A. J. Wilmott, while he was evolving his scheme for the identification and study of critical groups (Wilmott 1950), it became evident that in British material, the degree of pubescence may vary considerably within specific limits. This had already been noted for some species by Wettstein in his Monograph. In a study of the Kashmir Eyebrights, Pennell (1943) found three species (*E. platyphylla* Pennell, *E. foliosa* Pennell and *E. kashmiriana* Pugsley) where pubescence was quite variable. Among the North American representatives of the genus, Fernald and Wiegand (1915) found the same thing in *E. williamsii* Robinson, *E. purpurea* Reeks and *E. arctica* Lange. Turning to the Scottish material, Pugsley separated *E. marshallii* from *E. latifolia* (*E. frigida*) largely on the basis of the pubescence which, in the light of our knowledge of the genus as a whole, is insufficient grounds for the creation of a new species.

E. arctica is relatively common on the coastal regions of eastern and northern Quebec, Newfoundland, Baffin Island, Greenland, Iceland, the Faeroe Islands, Scotland (including the Orkney and Shetland Islands), Norway, Sweden, Finnland and Lappland. The range is believed to extend into Siberia, but verification of this is virtually impossible. It is a very variable species, as was recognized by Wettstein. Joergensen also found it so variable,

that when he published his *Die Euphrasia-Arten Norwegens* (1919), he created five varieties and one form, all based on Norwegian material alone. He had had an opportunity of examining material from Greenland, Iceland, the Faeroe Islands, Newfoundland and Alaska, lent to him by the Botanical Museum of the University of Copenhagen. Much of it he found was glandular, especially when collected from damp grassy locations, and sometimes the plants were covered with a felt-like mass of long white hairs, without glands. He did not attempt to apply varietal names to any of this material however.

In 1933 Pugsley reviewed this species again, also having had an opportunity of examining material from the Botanical Museum of the University of Copenhagen, much of it from Greenland, Iceland and the Faeroes, and probably the material seen by Joergensen. It was then that he realized the narrowness of his conception of *E. frigida* (*E. latifolia*). The only variety created by Joergensen that he adopted was var. *subcurta*, easily recognizable on account of its pubescence. He created four additional varieties.

In 1940 Polunin added var. *minutissima* from Greenland, which Rousseau (1942) reduced to the status of a form, as he felt sure that it represented a growth form due to exposure only.

Also in 1940, Nordhagen published his *Norsk Flora* in which the genus *Euphrasia* is largely a summary of Joergensen's paper (1919). However, he incorporated Joergensen's *E. minima* Jacq. and *E. latifolia* Pursh into *E. frigida* Pugsley, and divided it into two "types." The first is the "minima type," small leaved and small flowered, with short, weak, unbranched stems, which corresponds to Pugsley's var. *laxa* and Joergensen's var. *obtusata*, and the "latifolia type," much stouter, with large leaves and flowers, often with considerable pubescence on both surfaces of the leaves, which corresponds with Joergensen's var. *subcurta* and Pugsley's *E. marshallii*, and which represents *E. arctica* Lange, var. *arctica*. Nordhagen recognized two varieties however, as being sufficiently distinct—*E. latifolia*, var. *inundata* E. Joerg. and *E. minima*, var. *palustris* E. Joerg. For this latter variety, no particulars of calyx, flower or capsule are given.

In 1943 Montell recorded *E. frigida* Pugsley, var. *palustris* (E. Joerg.) Nordh. for Finland, and added a new taxon, *E. frigida*,

var. vel. f. *purpurea*, based simply on plants with purple flowers. He also mentioned a f. *eglandulosa* Wettst. of *E. frigida*, which it has not been possible to trace in Wettstein's monograph, nor in Pugsley's and Nordhagen's papers on *E. frigida*.

More recently three new species of *Euphrasia* were described by Pugsley (1945) from the Hebridean Islands off the Atlantic coast of northern Scotland. Through the kindness of Dr. George Taylor, Keeper of Botany, British Museum, London, photographs of these Pugsley type specimens have been obtained, and there is no doubt that *E. eurycarpa* Pugsley, with its small flowers and short lower lip, and the deeply emarginate capsules exceeding the calyx teeth, is the northern arctic form described by Joergensen as *E. latifolia*, var. *submollis*, and by other authors under other names to be mentioned presently.

The paper by Joergensen (1919) is well illustrated, while that of Pugsley (1933) contains neither figures nor plates. In the latter case however, for most varieties, illustrations are quoted from other sources. A careful examination of the descriptions, plates and material leads to the conclusion that there is needless duplication of varietal names, and that in reality there are only five varieties of *E. arctica*.

Lange described *E. arctica* as having visco-puberulent foliage, and in North America this is recognized as the typical form of the species. It therefore seems clear that the plant described by Joergensen and Pugsley as var. *subcurta* really is the species proper.

Euphrasia arctica. Lange ex Rostrup 1870

Folia visco-puberula, reniformi- vel cordato-orbicularia, obtusissime crenata, margine revoluta; bractae majusculae, sensim acutis crenatae v. serratae; flores subcapitato-congesti.

The chief points for identification are: branching from the middle of the stem or lower, branches erect, sometimes branching again; plants generally flowering from the 7-10 nodes. Cauline leaves generally caducous. Floral leaves broadly ovate to obtuse, medium to dark green, 5-15 mm. long, with 5-6 subacute to acute (but never acuminate) teeth per side. All more or less densely covered on both surfaces (or only on the margins and nerves of the lower surface) with short or long, strong, whitish bristles, sometimes with an admixture of short-stalked glands. Calyx clothed like the leaves, with rather long, acute teeth, accrescent in the fruit. Corolla small to medium, exceeding the bracts (floral leaves), 4-8 mm. long dorsally, white, with more or less lavender upper lip; lower lip exceeding

the upper. Capsule elongate elliptical, 6–8 mm. long, deeply emarginate, equalling to exceeding the calyx teeth, slightly pilose above, as well as ciliate, distinctly pedunculate.

A great deal, though not all, of the material from north of the 60th parallel possesses an admixture of short-stalked glands.

Only the synonymy relevant to the problem discussed here is included. For the complete synonymy the works of Wettstein (1896), Fernald & Wiegand (1915), Joergensen (1919), Pugsley (1930) and Fernald (1933) should be consulted, and Lange (1877), Wettstein (1896), Joergensen (1919) and Pugsley (1930) for figures and plates.

In the following paragraphs the location of the herbarium material mentioned is as follows: "N" in the Herbarium of the National Museum of Canada, Dept. of Mines and Resources, Ottawa; "B" in the Herbarium of the Division of Botany and Plant Pathology, Dept. of Agriculture, Ottawa. The writer is indebted to the officers in charge of these Herbaria for permission to borrow material.

E. arctica*, var. *arctica

E. latifolia Pursh (non Linnaeus) (1814); *E. officinalis*, var. *latifolia* (Pursh) Lange (1877); *E. latifolia*, var. *subcurta* E. Joergensen (1919); *E. marshallii* Pugsley (1929); *E. frigida*, var. *subcurta* (E. Joerg.) Pugsley (1933).

ICON. Lange (1877) tab. mmdcccxc.

EXSICC. see Wettstein (1896), Joergensen (1919), Pugsley (1933). TYPE: **Faeroe Islands**, Sandysford, Stromö, 31 August 1867, E. Rostrup (in Herb. Haun.). **Canada**: Lewis, H. F., Natashquan, Saguenay Co. Que., 5 Aug. 1927 (N); Collins, J. F., Fernald, M. L. & Pease, A. S., 70048, between Baldé and Baie des Chaleurs, Que., 5/8 Aug. 1904 (N); Adams, J., Anticosti. Que., 1933 (B). **Greenland**: Rosenwinge, L. K., Fgaliko, Greenland, 2 Aug. 1888 (ex Herb. Haun.) (N).

Plant more or less stout, branching below the middle of the stem. Floral leaves large, with short or long, strong, white bristles on the margins and on the nerves of the lower surface (sometimes more or less densely covering both surfaces). Calyx clothed like the leaves. Corolla medium, 6–8 mm. long dorsally, white with lavender upper lip, lower lip exceeding the upper. Capsule emarginate, equalling to slightly exceeding the calyx teeth.

Under the International Rules accepted in 1950, this variety delimits more clearly the plant first described by Lange and recognized as the typical *E. arctica*.

***E. arctica*, var. *obtusata* comb. nov.**

E. latifolia, var. *obtusata* E. Joergensen (1919); *E. frigida* Pugsley (1930); *E. frigida*, var. *laxa* Pugsley (1933); *E. frigida* "minima typen" Nordhagen (1940).

ICON. Joergensen (1919) pl. IX, o-r; Pugsley (1930) pl. 27, a-e.

EXSICC. see Joergensen (1919) and Pugsley (1933). TYPE: **Norway**, Sörkjosen in Nordreisa, Tromsø Amt, 13 Aug. 1908, E. Joergensen. **Canada**: Calder, J. A., No. 2222, Crystal Island, Fort Chimo area, 58° 07' N-68° 23' W, Que., 1 Aug. 1948 (B); Rousseau, J. & Boivin, B., No. 32236, Restigouche River, Que., 25/26 Aug. 1929 (N); Fernald, M. L. & Pease, A. S., No. 25273, Seacliffs, W. of Marten River, Gulf of St. Lawrence, Gaspé Co., Que., 25 July 1922 (N); Waghoush, Rev. A., No. 14474, Fox Harbour, Labrador, July 1881 (N). **Greenland**: Sørensen, Th., No. 4699, Terneskaer Island, 73° 55' N-21° 00' W, 26 July 1933 (N); Porsild, A. E., No. 304, Warmsprings, Engelskmandel Havn, S. coast of Disko Island, nr. Godhavn, 69° 14' N, 27/28 July 1937 (N). **Scotland**: Callen, E. O., No. 537 & 541, Stobinian, Perthshire, 5 Aug. 1940 (Herb. Callen).

Graceful, sometimes flexuose, often unbranched stem with very long internodes in the middle of the stem, and very short upper ones, giving imbricate floral leaves. Pubescence generally slight, and confined to the margins of the leaves and the calyx, and the nerves of the underside of the leaf and of the calyx. Calyx broad. Capsule elongate-elliptical, emarginate, often deeply so, and exceeding the calyx teeth. Flowers medium, 6-8 mm. long dorsally.

Pugsley described this as the "Scottish" or mountain form, and mentioned (1933) that it appeared to be common in Norway, and that it was to be found in Sweden and Lapland, as well as Greenland, Iceland and the Faeroes. In his Monograph (1930) he suggested (p. 491) that *E. latifolia*, var. *obtusata* E. Joerg. of Norway might be the same as the British *E. latifolia*, though he did not take this up again in his later paper (1933). Nordhagen's use of the term "minima typen" recalls the fact that Pugsley (1936) placed the British *E. latifolia* (as *E. frigida*) close to *E. minima* Jacq. in his classification of the genus *Euphrasia* section *Semicalcaratae* Benth., and that therefore in interpreting "minima typen," the var. *obtusata* appears to be the one that would most often be intended.

Joergensen never cited types for his plants, so under the International Rules, the first specimen mentioned* by him becomes the type.

*We have not been able to substantiate such an assumption.—Eds.

***E. arctica*, var. *submollis* comb. nov.**

E. latifolia, var. *submollis* E. Joergensen (1919); *E. marshallii*, var. *pygmaea* Pugsley (1930); *E. frigida*, var. *pusilla* Pugsley (1933); *E. arctica*, var. *minutissima* Polunin (1940); *E. arctica*, f. *minutissima* (Polunin) Rousseau (1942); *E. eurycarpa* Pugsley (1945).

ICON. Wettstein (1896) tab. XI, f. 12; Pugsley (1930) pl. 28, h.

EXSICC. see Joergensen (1919), Pugsley (1930, 1933, 1945) and Polunin (1940). TYPE: **Norway**, Insel im Flusse Altenelv, Alten, Finmarken Amt, 20 July 1913, O. D. **Canada**: Wynne-Edwards, V. C., No. 7306, Forbisher Bay, Yorke Island, Baffin Land, 2 Aug. 1937 (N); Malte, M. O., No. 119138, Wakeham Bay, Hudson Strait, 61° 40' N–72° 05' W, Que., 29 Aug. 1927 (N); Malte, M. O., No. 120163, Port Burwell, Hudson Strait, 60° 22' N–64° 50' W, Que., 25/28 July 1928 (N); Polunin, N., No., 1532, Sugluk West, Que., 31 July 1936 (N).

Plant small, flowering from the second or third node above the cotyledons. Leaves (cauline and floral) pubescent, often (but not always) with an admixture of short-stalked glands. Calyx clothed as the leaves. Flowers small, 3–4 mm. long dorsally, lower lip scarcely developed. Capsule more or less deeply emarginate, exceeding the calyx teeth.

This is the northern arctic variety of the species. Neither Joergensen nor Pugsley have given complete data of their varieties, but there seems to be no doubt that they were dealing with the same taxon in each case. Polunin's material is minute (p. 212), and some of Pugsley's var. *pusilla* is very stout, but these are probably extreme growth forms as suggested by Rousseau (1942), which in the present state of our knowledge of the whole *E. arctica* complex, should remain undesignated till the limits of the varieties are more clearly understood.

This variety is now known from Norway, Scotland, Iceland, Greenland and Canada, and although some of these countries are not arctic, the flora of their higher mountains is of the arctic-alpine type.

***E. arctica*, var. *inundata* comb. nov.**

E. latifolia, var. *inundata* E. Joergensen (1919); *E. frigida*, var. *attenuata* Pugsley (1933); *E. frigida*, var. *inundata* (E. Joerg.) Nordhagen (1940).

ICON. Joergensen (1919) fig. 16; Taf. IX, f, k, l; Taf. XI, a.

EXSICC. see Joergensen (1919) and Pugsley (1933). TYPE: **Norway**: Nahe der Mündung des Flusses Reisenelv, Sörkjosen in Nordreisa, Tromsø Amt, July 1905, Elm, Peters & Selander. **Canada**: Hosie, Losee &

Bannan, No. 2150, Wilson Island, off Rosspoint, Thunderbay District, Ont., 15 July 1937 (N); Hosie, Losee & Bannan, No. 2149, beach nr. Schreiber, N. shore, Lake Superior, 48° 45' N-87° 15' W, Thunderbay District, Ont., 20 July 1937 (N); Baldwin, Hustich, Kucyniak & Tuomikoski, No. 1037, nr. Sandy Point, Great Whale Lake, E. coast, Hudson Bay, Que., 15 August 1947 (N).

Plants with long internodes and small leaves. Flowers small. Calyx teeth acute or less. Capsule narrowly oblong, up to 8 mm. long, narrow above, greatest breadth about the middle, subtruncate or slightly retuse, clearly exceeding the calyx teeth.

This variety is found in moist situations, and even in areas flooded by river water. It has been found in Norway, Iceland and Canada.

***E. arctica*, var. *stromoensis* comb. nov.**

E. frigida, var. *stromoensis* Pugsley (1933).

ICON. none.

EXSICC. Pugsley (1933). TYPE: **Faeroe Islands**: Havnedal, Stromö, 1903, Ostenfeld (in Herb. Haun.).

Plant small, robust, slightly pilose, lower internodes very short, and branching from the lower nodes. Corolla small, 4-5 mm. long dorsally. Capsule oblong-elliptical, strongly emarginate. Pugsley does not state the relationship of the capsule and the length of calyx teeth.

This plant does not appear to have been described from Norway or Britain, though plants that seem to resemble it have been seen from Perthshire, Scotland. Until the type specimen and the British Museum material from the Pugsley Herbarium can be examined, this cannot be certain however. This variety has not been seen from Canada.

REJECTED VARIETIES

E. LATIFOLIA, var. *SUBFOULAENSIS* E. Joerg.—this a curious name to choose for a variety, as *E. foulaensis* is closely related to *E. latifolia*, but it points up the confusion that existed amongst European botanists as to the correct identity of *E. latifolia* Pursh ex Wettstein and *E. foulaensis* Towns., until they were redefined by Pugsley in 1930. Joergensen admitted that this variety is difficult to distinguish from *E. micrantha* Reichenbach, and that it is probably a hybrid with this species. The characters that are given for this variety, suggest that there is more of the *E. micrantha* parentage in its make up, than of the *E. latifolia* parentage. There appears to be no justification for including it as a variety of *E. latifolia*, as the general appearance of the plant suggests *E. micrantha* very strongly. It differs from the latter chiefly in the longer lower internodes, and in the much larger coarser leaves.

E. FRIGIDA, var. *PALUSTRIS* (E. Joerg.) Nordhagen—these plants bear a close resemblance to *E. scotica* Wettstein, which Nordhagen himself admits (p. 581), and here also it would seem best to place this plant under *E. scotica*, with a note that it might be of hybrid origin.

E. MINIMA, var. *PILOSA* Hagelund ex E. Joergensen—was ignored by Nordhagen when he amalgamated Joergensen's *E. minima* Jacq. and *E. latifolia* Pursh under *E. frigida* Pugsley. From the description given, this might be *E. arctica*, var. *submollis*, but the description is lacking in a number of details to make this reasonably certain.

E. FRIGIDA, var. vel f. *PURPUREA* Montell—at most this is a form with purple flowers, that for the present will have to be left in abeyance till the different varieties of *E. arctica* are more clearly understood. This applies also to the forms of *E. latifolia* and *E. frigida* described by other authors.—MACDONALD COLLEGE, MCGILL UNIVERSITY, MONTREAL, QUE.

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NOMENCLATORIAL AND OTHER NOTES ON
MOSESSES—II

HERBERT HABEEB

THE following notes cover a few interesting things recently encountered in the processing of some New Brunswick specimens of mosses.

FISSIDENS CRISTATUS Wils., forma **immarginatus**, n.f., differt a species margine pellucida folliorum deficiente.—NEW BRUNSWICK: hanging from ledge in a crevice in canyon at Grand Falls, Victoria County, *Habeeb 279* (type), May 5, 1944.

I see no reason why the form possessing leaves without the hyaline margin should not be recognized.

MYURELLA CAREYANA Sull., var. **tenella**, var. nov., plantae parvulae, tenerimae, flagelliferae; folliis lanceolatis, cellulis papillois; cum habitum *Amblystegiellae*.—Small, thin, flagelliferous plants; leaves lanceolate and serrate, cells strongly papillose; with the habit of *Amblystegiella Sprucei*.—NEW BRUNSWICK: *Habeeb 821*, on damp rock in deep shade of canyon, July 3, 1947, Grand Falls, Victoria County.

Without the field knowledge of habitat and associated plants, this would have been rather difficult to place.

HYGROHYPNUM MOLLE (Schimp.) Loeske *Habeeb 951, 952*, York County, New Brunswick; *1641*, Albert County, New Brunswick, this has rather strong costae in its leaves.

HYGROHYPNUM MOLLE (Schimp.) Loeske, var. **Bestii** (Ren. & Bryhn), stat. nov. *Hypnum (Limnobium) Bestii* Ren. & Bryhn, REV. BRYOL. **28**: 8 (1901). *Hygrohypnum Bestii* (Ren. & Bryhn) Holzinger,¹ THE BRYOLOGIST **4**: 12 & 22 (1901). *Hygrohypnum Bestii* (Ren. & Bryhn) Broth., ENGLER & PRANTL MUSCI (Ed. I) **2**: 1040 (1908). *Habeeb 1640*, Albert County, New Brunswick; *1639, 1642, 1643* and *1644* are turgid and possess secondary stems inseparable from the species, Albert County, New Brunswick; *918*, Victoria County, New Brunswick, turgid without secondary shoots.

¹ On looking back into the early files of THE BRYOLOGIST, one finds that using the exact letter this could be cited as *Hygrohypnum Bestii* (Ren. & Bryhn) Holzinger apud Grout et Smith in Editor's footnote to Holzinger, THE BRYOLOGIST **4**: 22 (1901). In place of this complex citation, Grout in the Moss Flora of North America North of Mexico, Volume III, used that of Brotherus of 1908.